Racing Crank shaft Kit Instruction Manual

Stroke: 39 mm

Item No.：**０１－１０－０１１５** (For SCUT only)
Applicable Models and Flame No.
Monkey・Gorilla ：Z50J-2000001～
：AB27-1000001～1899999

・Thank you for purchasing one of our products. Please strictly follow the following instructions in installing and using the products.
・Before fitting the products, please be sure to check the contents of the kit. Should you have any questions about the products, please kindly contact your dealer.

◎ **Please note: Illustrations and photos may vary from actual hardware.**

Please read the following before starting the installation

◎ Need the special tool to install crankshaft.
◎ We shall be held free and harmless from any and all liabilities or claims for any accidents or damages whatsoever arising from the use of the products not in conformity with the instructions in the manual.
◎ This kit is designed for exclusive use in the above-mentioned applicable models of motorcycles and frame numbers only. Please take note that this kit cannot be mounted on other types of motorcycles.
◎ Installation of this product requires removal and installation of an engine, and disassembly of a crankcase. Please prepare HONDA's service manual for an above-mentioned applicable vehicle, and work with enough care following the instructions in the service manual. Besides, this instruction manual, as well as HONDA's service manual, is prepared for persons who have acquired basic skill and knowledge in tuning. We recommend those who are technically inexperienced or without right tools to ask a technically-trustworthy specialist shop to do the work.
◎ The products is installed and being used, when you have troubles with the parts during operation, we shall be held free and harmless from any and all liabilities or claims for any defects of the parts unless they are genuine parts manufactured by our company.
◎ TAKEGAWA does not accept returns on any parts which have been modified, or installed on a vehicle.
◎ We do not have any information or service data on the combination of our products and other manufacturers'.
◎ Always use new bolts, nuts, dowel pins and sealings. Never reuse severely worn-out or damaged ones.
◎ Use liquid packing at the specified points only, and never use them at unspecified points. Otherwise, the packing may oppilate oil passages; it may break the engine in the worst case.
◎ Be sure to always use premium unleaded petrol. And make sure to check what kind of gasoline is remaining in the fuel tank. Whenever regular gasoline is left in the fuel tank, always replace it with high-octane gasoline.
◎ This kit cannot be used for the point ignition system.
◎ Please be informed that what we can safely say is that the ignition system of this kit is compatible with ours and stock ignition systems, because no data is available with us on the compatibility with other ignition systems. Therefore, please never use other ignition systems, which may cause technical troubles.
◎ Install an oil filter outside.
◎ Engine oil must be API SF or higher class, such as SAE 10W-40 / 15W-50, which are our recommendations.
◎ Change the sprocket with the one which meets the output and specifications.
◎ This kit cannot perform on its own.
◎ This kit is only compatible with those engine parts recommended by us. So, please replace the engine parts not recommended by us with those of our recommendations.
◎ Some parts need to be tightened with different torque from the one for genuine parts. Be sure to follow this Instruction Manual.
◎ Use only for a crankcase without modifying. Or we recommend our Special Crankcase Kit (01-00-0024).

～Features～

○ This the 100cc racing kit (for SOHC or DOHC) with short stroke crankshaft (39mm)
○ This crankshaft is used with SCUT piston (57mm) only.
○ The crankshaft made by billet forged that specially designed for racing use.
○ Die -Hard cam chain included (82L).
○ Crankshaft is designed for vibrate minimal.
○ To make friction minimal, use special bearing.

Jump-Starting and Sudden Acceleration

Idling, sudden acceleration, and sudden engine braking will put a heavy load on the engine, which please note may result in crank shaft damage and engine breakage in the worst case.

⚠Caution The following show the envisioned possibility of injuries to human bodies or property damages as a result of disregarding the following cautions.

- Since this kit is designed and developed for driving in closed races, do not use the kit for running on public roads. Always try to drive your motorcycle at a legal speed, abiding by the laws.
- Work only when the engine and the muffler are cool. (Otherwise, you will burn yourself.)
- Prepare right tools for the work, and do the work in the proper and right way. (Otherwise, improper work could cause breakage of parts or injuries to yourself.)
- Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque. (Improper torque could cause these parts to get damaged or fall off.)
- As some products and frames have sharp edges or protruding portions, please work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every section for slack in parts like screws. If you find slack ones, screw them securely up to the specified torque. (Or improper torque may cause parts to come off.)
- Always use new gasket and packing. In case you continue using these parts, carefully check them for wear or damage, and in case wear or damage is detected, always replace those worn or damaged parts with new ones.

⚠Warning The following show the envisioned possibility of human death or serious injuries to human bodies as a result of disregarding the following cautions.

- Always start the engine in a well-ventilated place, and do not turn the engine on in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- When you notice something abnormal with your motorcycle while riding down a road, stop riding immediately and park your motorcycle in a safe place. (Otherwise, the abnormality could lead to an accident.)
- Before doing work, place the motorcycle on level ground to secure it for safety's sake. (Otherwise, your motorcycle could overturn and injure you while you are working.)
- Check or perform maintenance of parts correctly according to the procedures in the instruction manual or a service manual. (Improper checking or maintenance could lead to an accident.)
- If you find damaged parts when checking and performing maintenance of your motorcycle, do not use these parts any longer, and replace them with new ones. (The continued use of these damaged parts as they are could lead to an accident.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place.

◎ Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior notice.
◎ Please be informed that we shall be held harmless against any claim against us whatsoever arising out of use of the products in racing and the like.
◎ This manual should be retained for future reference.

●Cautions before riding

① Fuel requirement

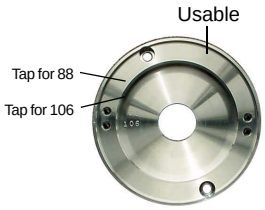
Use high-octane gasoline ONLY. Be careful not to remain the regular gasoline.

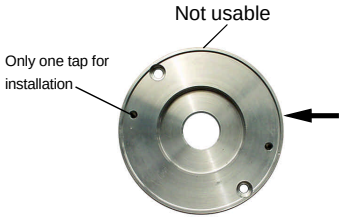
●Engine parts of our recommendation

※ This kit is compatible with the engine parts of our recommendations only. Therefore, please replace with our recommended engine parts.

Recommended parts	
Cylinder head	DOHC Cylinder head
	Super head+R
Cylinder	DOHC 100cc SCUT Cylinder : 01-04-0122
	Super head+R 100cc SCUT Cylinder : 01-04-0123
Clutch	Dry-type clutch kit
	Special clutch kit
A.C.G.	S/S rotor Kit : 05-02-0001
	C.D.I. magnet kit: 05-02-0512

※The old type inner rotor C.D.I. CANNOT be used.



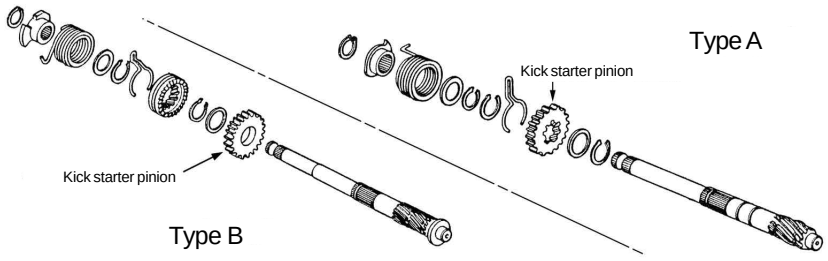


NEVER use an old-type base plate.
Please replace it with the one of our recommendations to avoid any troubles.

◆ About the case of using 5-speed transmission

◇In case you install a 5-speed transmission kit and your kick starter spindle is type A, make sure to change the spindle to type B spindle. This will improve the efficiency in transmitting the torque at the time of kick start and reduce the load on the gear which will lead to the prevention of gear breakage.

◇ It is necessary to change a kick starter pinion as well at the time of changing the kick-starter spindle type B. Change it with the right one with the number of teeth to match the transmission kit. Please take note that the kick starter pinion type A is unusable.



Parts Name	Item No.
Type-B kick starter spindle kit	02-04-0011
Type-B kick starter pinion 23T	28211-165-T00
Type-B kick starter pinion 25T	00-02-0105

◎ Please do not use with other manufactured products.

● Others

① Oil cooler:

◇The installation of this Kit increases the heat release value of the engine, set off by the increase in engine power. For a long-time, high-load riding, we recommend you to install an Oil Cooler Kit which keeps oil at appropriate temperatures and prevents such troubles as oil film shortage at high temperatures.

②Thermometer:

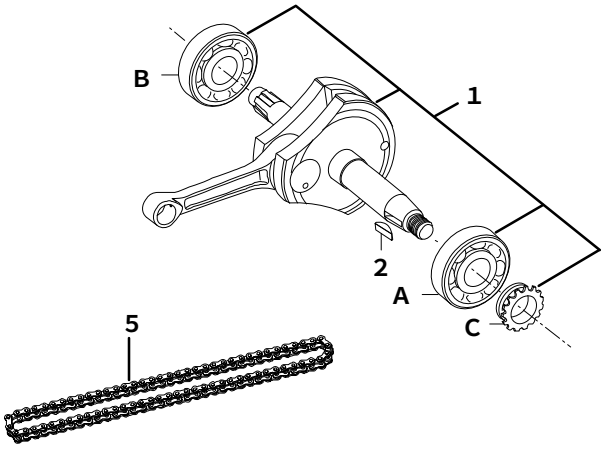
Always use temp gauge to control oil temperature properly.

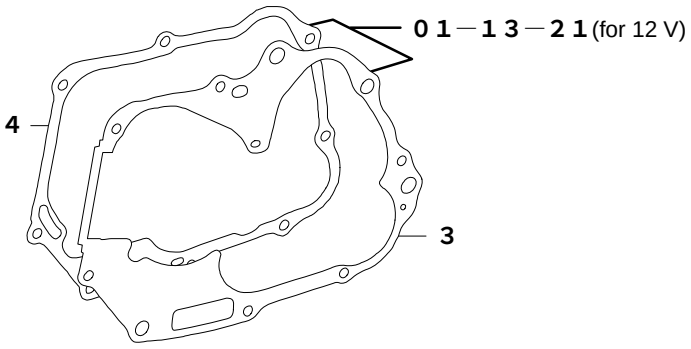
●Number of revolutions

◇The upper limit of revolutions varies depending on the installed cam shafts, cylinder heads, etc. Please install the tacho meter and be sure not to drive the engine over the limit, following the instructions for a cam shaft or cylinder head.

◇ Take note that idling and sudden acceleration in the 1st and the 2nd gear particularly tend to over reved. Over revolutions will result in nonsmooth revolutions of the engine, not only adversely affecting the engine life, but also breaking the engine in the worst case.

～Kit Contents～





※Please note that in ordering repair parts, be sure to quote the Repair Part Item No. Otherwise, we may not be able to accept your orders. There are some parts, however, for which we are not in a position to accept your order in just the quantity to be used. In this case, please take them in the quantity packed.

No.	Parts Name	Qty	Repair Parts No.	Qty
1	Crank shaft COMP.	1	01-10-0116	1
2	Woodruff key	1	00-01-0011	1
3	Crank case gasket	1	00-01-0096	1
4	Right-side crank case gasket	1	00-01-0095	1
5	Dai hard α cam chain (82L)	1	01-14-0002	1

Symbol	Parts Name	Qty	Repair Parts No.	Qty
A	Radial ball bearing	1	00-01-0045	1
B	Radial ball bearing	1	00-01-0245	1
C	Timing sprocket	1	14311-035-T00	1

SPECIAL PARTS TAKEGAWA Co.,Ltd.
3-5-16 Nishikiorihigashi Tondabayashi Osaka Japan
TEL : 81-721-25-1357 FAX : 81-721-24-5059
URL : http://www.takegawa.co.jp

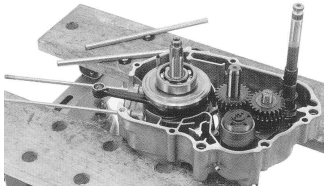
～Installation Procedures～

Removal

∴ Please do the following work referring to the service manual.

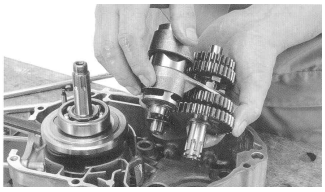
○ Referring to the service manual, demount an engine from the body.

○ Referring to the service manual, disassemble the engine, detach a stator plate, and separate crankcases.



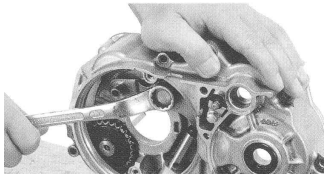
○Detach an oil pump.

○Detach a kick starter spindle, and then a transmission and gear shift drum joined together as a unit.



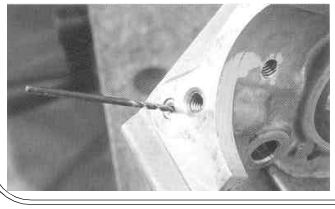
○ Detach a crank shaft.

○Detach parts on a cam chain tensioner and a guide roller from crankcases.



○ Detach a stud bolt from the crankcases.

○Enlarge orifice diamter of the right crankcase referring to the instruction manual for a super oil pump.



Installation

○ Attach a cam chain guide sprocket and spindle.

○With a special tool, fix a crank shaft COMP. of the kit into the right crankcase.
Special tool: Crank shaft installer
Item No.:00-01-1008

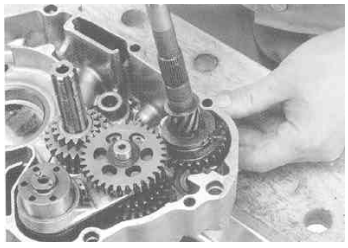
⚠Caution : Do the work with the special tool following the instruction for use of the tool.

⚠Caution : Do not give the crank shaft an excessive shock.

○Apply engine oil to the bearing on the crankcases.

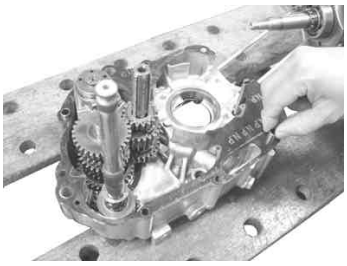
○ Referring to the installation procedures and service manual for your transmission, attach the transmission and gear shift drum to the left crankcase.

○ Attach the starter spindle.



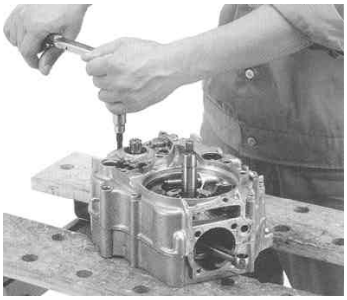
○Apply engine oil to a big end of crank shaft of the kit and to the bearing.

○ Fix a gasket of the kit and dowel pins into the crankcase, install the right-side crankcase.



○ After applying enclosed the " Alumi Special " paste to the threaded portion of the crankcase bolts, install the bolts onto the crankcase and tighten them diagonally to the specified torque.

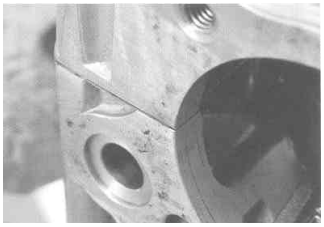
⚠Caution : Be sure to follow the specified torque.
Torque: 10 N･m (1.0 kgf･m)



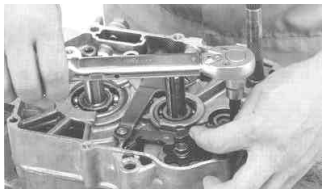
○ Being careful of the dirction of the gear shaft drum washer, tighten shift drum bolts to the specified torque with a hex bolt. And attach a rubber plug.

⚠Caution : Be sure to follow the specified torque.
Torque: 12 N・m(1.2 kgf・m)

○When installing the gasket, please remove the excess if necessary.
※ Be careful not to get any gasket chip in the crankcase.

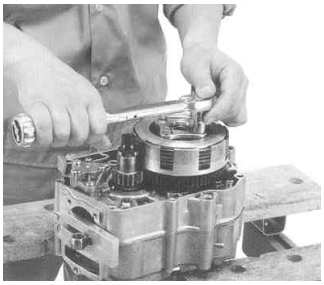


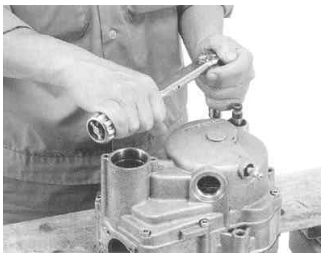
○Install the transmission related parts on the left side.
(see the instruction manual)



○ Install the oil filter screen, and install Super Oil Pump.
(see the instruction manual)

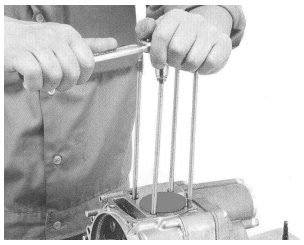
○ Install a clutch.
(see the instruction manual)



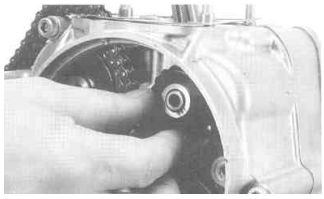


(When you remove stud bolt.)

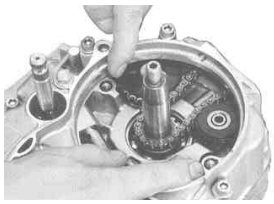
○ After applying the " Alumi Special "paste to the threaded part of the stud bolts, attach stud bolts to the crankcase, and tighten them to the specified torque. Fix the stud bolt B, the shorter stud bolt, to the clutch side.



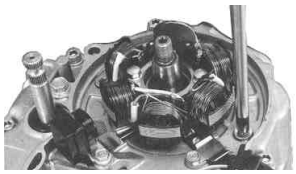
○ Fit the cam chain into the crank shaft and attach a tensioner roller.



○ Fix O-rings onto two locations.



○ Install a generator plate, and tighten the flat screws.



○ Fix the woodruff key to the crank shaft.

○ Degrease well the tapered section on the flywheel, and attach the flywheel. Apply screw locking agent a little to an M10 flange nut and screw it up to the specified torque.

⚠ Caution : Be sure to follow the specified torque.
Torque: 54 N•m (5.5 kgf•m)

∴ Recommended screw locking agent : LOCTTE 243

○ Install the cylinder.
(see the cylinder kit installation procedures)

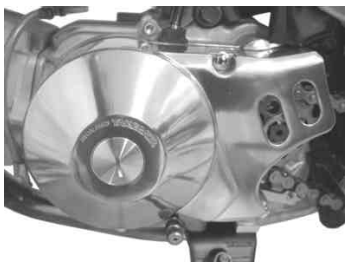
○ Attach a cylinder head following the installation procedures of the cylinder head.

○ Apply Alumi Special to the bearing-supporting section at the end of the crank shaft.

○ Referring to the service manual, fix a drive chain.

○ Install generator cover with specified torque.

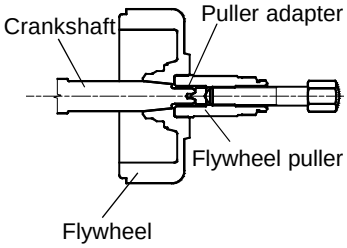
⚠ Caution : Be sure to follow the specified torque.
Torque: 10 N•m (1.0 kgf•m)



○ Pour the engine oil up to the level specified by the clutch kit.

☆ Precautions to take when removing the flywheel:

○ When removing the flywheel with a flywheel puller, it is advisable to use a puller adapter in order to protect the crankshaft end, as shown in the fig. below.
Use special tool (00-01-031 flywheel puller).



☆ Special Tools

● Con' rod stopper
Item No.:00-01-01

● Lock nut wrench
Item No.:00-01-021 for 12.7 mm (1/2)
00-01-022 for 19.5 mm (3/8)

● Flywheel puller
Item No.:00-01-031

● Universal holder
Item No.:00-01-1002

● Crank shaft & installer
Item No.:00-01-1008

● Puller adapter
Item No.: 00-01-1027

● Alumi special (5 g)
Item No.: 00-01-0001

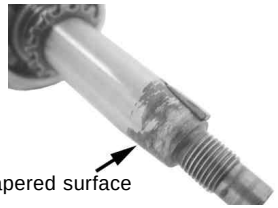
INSPECTION / SERVICE LIMITS

Items	Stock	Service limit	Notes
Internal diameter of con'rod at small end	————	14.05mm	Replace
Clearance between con'rod's small end and a pin	0.003～0.018mm	0.035mm	Replace
Misalignment on con'rod's big end (longitudinal and transversal direction)	0～0.012mm	0.05mm	Replace
Side clearance		0.6mm	Replace or modify
Free play on the journal bearings (in the direction of shaft)	————	0.1mm	Replace
(in the direction of bearings)	————	0.05mm	Replace
Crank shaft deflection	————	0.1mm	Replace or modify

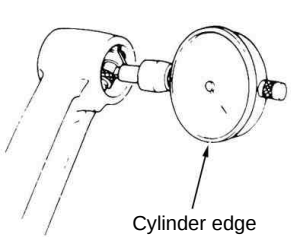
⚠ Warning: The unskilled or those without proper knowledge are requested not to do the installation work.

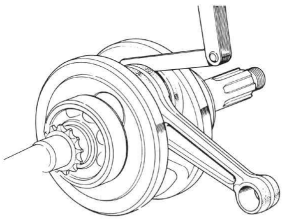
○ Inspection of Crank Shaft

• Check the crank shaft for damages on the flywheel-mounting surface.
If there is a damage, replace the flywheel and the crank shaft.

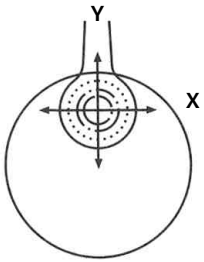


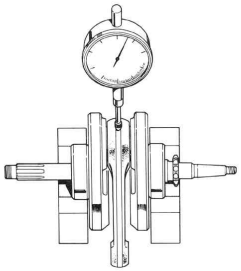
• Check the damage or wear at the connecting rod end.
• Measure the internal diameter at the small end of the con'rod.
∴ If larger than 14.05 mm, replace it.
• Measure the clearance at the big end of the con'rod in the axial direction.
∴ If larger than 0.6mm, Replace or modify.



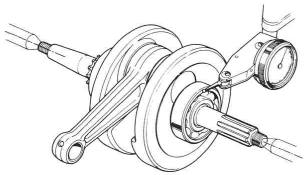


• Measure the misalignment at two points at the big end of the con'rod at right angles to the shaft as shown in the figure on the right.
∴ If larger than 0.05mm, replace it.





• Measure the misalignment on the journal bearing of the crank shaft.
∴ Shaft direction:If larger than 0.10 mm, replace it.
Bearing direction: If larger than 0.05 mm, replace it.



• Measure the deflection of the crank shaft.
∴ If larger than 0.10 mm, Replace or modify.